

**AMENDMENTS TO THE CLAIMS:**

Please amend the claims to read as follows:

1 Claim 1 (currently amended): A switching fabric for transmitting data frames to destinations,  
2 each data frame ~~having~~ specifying a destination, the switching fabric comprising:  
3 a plurality of input ports for partitioning ~~portions of~~ received data frames into provide  
4 data cells; and  
5 a plurality of crossbar sections, each ~~of the~~ crossbar sections being coupled to each ~~of the~~  
6 input ports for receiving the data cells at cell transfer intervals on a data link coupled between  
7 each ~~of the~~ input ports and each ~~of the~~ crossbar sections, each ~~of the~~ crossbar sections being  
8 coupled to transmit the data cells to any one of a plurality of output ports,  
9 wherein each ~~of the~~ input ports includes logic for scheduling the transmission of each  
10 data cell of each ~~said~~ a received data frame ~~received at each of the input ports during a cell~~  
11 ~~transfer interval for each data link coupled between each of the input ports and each of the~~  
12 ~~crossbar sections to any output port,~~ based upon an ability of each ~~of the~~ a crossbar sections to  
13 receive the data cells ~~of the data frames with a destination associated with each of the output~~  
14 ~~ports.~~

1 Claim 2 (currently amended): The switching fabric of claim 1, wherein each ~~of the~~ input ports  
2 maintains a plurality of data frame queues ~~of for~~ received data frames, each ~~of the~~ data frame  
3 queues corresponding with one of the output ports and having logic for enqueueing data frames  
4 ~~having~~ specifying a destination associated with the output port.

1 Claim 3 (currently amended): The switching fabric of claim 2, wherein each said data frame  
2 includes a data payload and each ~~of the~~ input ports provides for each said data frame one or more  
3 associated data cells including a portion of the data payload, the one or more associated data  
4 cells collectively having the data payload of each ~~of the~~ said data frames, wherein the scheduling  
5 logic at each of the input ports schedules a transmission of each ~~said~~ data cell to one of the  
6 crossbar sections on the data link coupled between each ~~of the~~ input ports and each ~~of the~~  
7 crossbar sections.

1 Claim 4 (cancel).

1 Claim 5 (currently amended): The switching fabric of claim 3, wherein for each data link  
2 coupled between each ~~of the~~ input ports and each ~~of the~~ crossbar sections, each ~~of the~~ input ports  
3 attempts to schedule a data cell of a partially transmitted data frame, the partially transmitted  
4 data frame having at least one associated data cell previously scheduled for transmission to a  
5 crossbar section, prior to scheduling a transmission of a data cell of a data frame for which no  
6 data cells have been previously scheduled for transmission to a crossbar section.

1 Claim 6 (currently amended): The switching fabric of claim 1, wherein each ~~of the~~ crossbar  
2 sections maintains a plurality of data cell queues ~~of for~~ data cells received on the data links  
3 coupling each ~~of the~~ crossbar sections to each ~~of the~~ input ports, each ~~of the~~ data cell queues  
4 corresponding with an output port, each ~~of the~~ data cells in each ~~of the~~ data cell queue being of a  
5 partition ~~of a portion~~ of a data frame having specifying a destination associated with the output  
6 port.

1 Claim 7 (currently amended): The switching fabric of claim 6, wherein each ~~of the~~ data cell  
2 queues of the crossbar section is capable of enqueueing a finite number of data cells at any one  
3 time, and wherein the ability of the crossbar section to receive data cells of data frames with a  
4 destination associated with the output port is based upon a quantity of locations in each ~~of the~~  
5 data cell queues, ~~which are~~ each location capable of receiving a single data cell from an input  
6 port.

1 Claim 8 (currently amended): The switching fabric of claim 1, the switching fabric further  
2 including a plurality of output ports, each output port having logic for reassembling data frames  
3 ~~having~~ specifying a destination associated with each said output port from data cells received  
4 from each ~~of the~~ crossbar sections coupled to each said output port.

1 Claim 9 (currently amended): The switching fabric of claim 8, wherein each said output port is  
2 coupled to one or more media access control (MAC) devices through a common transmission  
3 medium, and wherein for each MAC device coupled to each said output port, each said output  
4 port maintains an associated MAC queue of reassembled data frames for transmission to each  
5 said MAC device, the destination of each reassembled data frame in the associated MAC queue  
6 being associated with the MAC device.

1 Claim 10 (currently amended): The switching fabric of claim 9, wherein each said output port  
2 transmits a signal to each ~~of the~~ crossbar sections indicating an ability to receive data cells from  
3 data links coupling each said output port to each ~~of the~~ crossbar sections.

1 Claim 11 (currently amended): The switching fabric of claim 1, wherein the switching fabric  
2 includes a plurality of output ports and for each of the output ports, each of the crossbar sections  
3 transmits a signal to each of the input ports indicating the ability of each of the crossbar sections  
4 to receive the data cells of the data frames ~~having~~ specifying a destination associated with the  
5 output port.

1 Claim 12 (currently amended): A method of transmitting digital data from a plurality of sources  
2 to a plurality of destinations, the method comprising:  
3 receiving data frames at each of a plurality of input ports;  
4 partitioning portions of the received data frames to provide data cells;  
5 receiving the data cells at each of a plurality of crossbar sections at cell transfer intervals  
6 on a data link coupled between each of the crossbar sections and each of the input ports; and  
7 transmitting data cells from each of the crossbar sections to any one of a plurality of  
8 output ports; and  
9 scheduling at an input port the transmission of each data cell of each a received data  
10 frame received at each of the an input ports during a cell transfer interval for each data link  
11 coupled ~~between each of~~ to the input ports and each of the crossbar sections based upon an  
12 ability of each of the a crossbar sections to receive the data cells of data frames with a destination  
13 associated with the output port.

1 Claim 13 (currently amended): The method of claim 12, the method further comprising  
2 maintaining a plurality of data frame queues ~~of~~ for the received data frames at each of the input

3 ports, each of the data frame queues corresponding with one of the output ports and enqueueing  
4 data frames having specifying a destination associated with the one of the output ports.

1 Claim 14 (currently amended): The method of claim 13, wherein each of the data frames  
2 includes a data payload, the method further comprising:  
3 providing for each data frame in a data frame queue at an input port one or more  
4 associated data cells including a portion of the data payload of each said data frame, the one or  
5 more associated data cells collectively having the data payload of each said data frame; and  
6 scheduling a transmission of the one or more associated data cells to ~~one of the crossbar~~  
7 ~~sections on the data link coupled between the input port and the one of the crossbar sections.~~

1 Claim 15 (currently amended): The method of claim 14, the method further comprising  
2 scheduling a transmission of the one or more associated data cells to ~~the one of the crossbar~~  
3 ~~sections on the data link coupled between the input port and the crossbar sections prior to~~  
4 scheduling a transmission of a data cell of a subsequent data frame in the data frame queue to  
5 any of the crossbar sections.

1 Claim 16 (currently amended): The method of claim 15, the method further comprising, for each  
2 data link coupled between each input port and each crossbar section, attempting to schedule a  
3 transmission of a data cell of a partially transmitted data frame, the partially transmitted data  
4 frame having at least one associated data cell previously scheduled for transmission to a crossbar  
5 section prior to scheduling a transmission of a data cell of a data frame for which no data cells  
6 have been previously scheduled for transmission to a the crossbar section.

1 Claim 17 (currently amended): The method of claim 12, the method further comprising, at each  
2 ~~of the~~ crossbar sections, maintaining a plurality of data cell queues ~~of for~~ data cells received on  
3 the data links coupling each ~~of the~~ crossbar sections to each ~~of the~~ input ports, each ~~of the~~ data  
4 cell queues corresponding with an output port, each ~~of the~~ data cells in each ~~of the~~ data cell  
5 queues being of a partition ~~of a portion~~ of a data frame ~~having~~ specifying a destination associated  
6 with the output port.

1 Claim 18 (currently amended): The method of claim 17, wherein each ~~of the~~ data cell queues of  
2 a crossbar section is capable of enqueueing a finite number of data cells at any one time, the  
3 method further including determining the ability of the crossbar section to receive the data cells  
4 of the data frames with a destination associated with the output port based upon a quantity of  
5 locations in each ~~of the~~ data cell queues, ~~which are~~ each location capable of receiving a single  
6 data cell from an input port.

1 Claim 19 (currently amended): The method of claim 12, the method further comprising:  
2 receiving the data cells at ~~each of the plurality of an~~ output ports from each ~~of the~~  
3 crossbar sections coupled to the output ports; and  
4 at each the output port, reassembling data frames ~~having~~ specifying a destination  
5 associated with ~~each said the~~ output port from data cells received from each ~~of the~~ crossbar  
6 sections coupled to ~~each said the~~ output port.

1 Claim 20 (currently amended): The method of claim 19, the method further comprising, at each  
2 ~~said the~~ output port, maintaining a media access control (MAC) queue of reassembled data

3 frames to be transmitted to one or more MAC devices through a common transmission medium,  
4 the destination of each reassembled data frame in the MAC queue being associated with the one  
5 or more MAC devices.

1 Claim 21 (currently amended): The method of claim 17, the method further comprising  
2 transmitting a signal from each ~~said~~ output port to each ~~of the~~ crossbar sections indicating an  
3 ability to receive data cells from data links coupling each output port to each ~~of the~~ crossbar  
4 sections.

1 Claim 22 (currently amended): The method of claim 12, the method further comprising  
2 transmitting a signal from each ~~of the~~ crossbar sections to each ~~of the~~ input ports indicating the  
3 ability of each ~~of the~~ crossbar sections to receive the data cells of the received data frames  
4 having specifying a destination associated with the output port.

1 Claim 23 (currently amended): A switch fabric ~~in~~ a data communication network including a  
2 plurality of host computers for transmitting data packets to a plurality of destinations, each  
3 destination being associated with a media access control (MAC) device having a MAC address,  
4 the ~~improvement including~~ switching fabric comprising:  
5 a plurality of output ports, each ~~of the~~ output ports being coupled to at least an associated  
6 one of the MAC devices for transmitting MAC data frames to the ~~at least one~~ MAC device  
7 according to the MAC address associated therewith;  
8 a look-up engine for receiving the data packets from the host computers and forming  
9 intermediate data frames based upon the data packets, the intermediate data frames having

10 information identifying an output port associated with one of the destinations of the network  
11 MAC device in a header and a data payload;  
12 a plurality of input ports for receiving the intermediate data frames from the lookup  
13 engine, each ~~of~~ input ports partitioning the data payload of at least some of the intermediate  
14 frames received at the input port to provide a plurality of data cells; and  
15 a plurality of crossbar sections, each ~~of~~ the crossbar sections being coupled to each of the  
16 input ports for receiving the data cells at cell transfer intervals on a data link coupled between  
17 each of the input ports and each of the crossbar sections, each of the crossbar sections being  
18 coupled to transmit the data cells to any one of the plurality of output ports,  
19 wherein each of the input ports includes logic for scheduling the transmission of each  
20 data cell of each a received intermediate data frame ~~received at each of the input ports during a~~  
21 ~~cell transfer interval for each data link coupled between each of the input ports and each of the~~  
22 ~~crossbar sections to any output port,~~ based upon an ability of each of the a crossbar sections to  
23 receive the data cells ~~of data frames associated with the output port.~~

1 Claim 24 (currently amended): The ~~data communication network~~ switch fabric of claim 23,  
2 wherein each ~~of the~~ input ports maintains a plurality of data frame queues ~~of~~ for received  
3 intermediate data frames, each ~~of the~~ data frame queues corresponding with ~~one of the~~ an output  
4 ports and enqueueing intermediate data frames ~~having~~ specifying a destination associated with the  
5 output port.

1 Claim 25 (currently amended): The ~~data communication network~~ switch fabric of claim 24,  
2 wherein each ~~of the~~ received intermediate data frames includes a data payload and each of the



3 input ports provides for each data frame one or more associated data cells including a portion of  
4 the data payload, the one or more associated data cells collectively having the data payload of the  
5 data frame, wherein the scheduling logic at each of the input ports schedules a transmission of  
6 the one or more associated data cells to ~~one of~~ the crossbar sections on the data link coupled  
7 between each ~~of the~~ input ports and each ~~of the~~ crossbar sections.

1 Claim 26 (currently amended): The ~~data-communication network~~ switch fabric of claim 25,  
2 wherein each ~~of the~~ input ports schedules a transmission of the one or more associated data cells  
3 to ~~one of~~ the crossbar sections on the data link coupled between each ~~of the~~ input ports and each  
4 ~~of the~~ crossbar sections prior to scheduling a transmission of a data cell of a subsequent data  
5 frame in the data frame queue to any of the crossbar sections.

1 Claim 27 (currently amended): The ~~data-communication network~~ switch fabric of claim 25,  
2 wherein for each data link coupled between each ~~of the~~ input ports and each ~~of the~~ crossbar  
3 sections, each ~~of the~~ input ports attempts to schedule a data cell of a partially transmitted data  
4 frame, the partially transmitted data frame having at least one associated data cell previously  
5 scheduled for transmission to a crossbar section, prior to scheduling a transmission of a data cell  
6 of a data frame for which no data cells have been previously scheduled for transmission to the  
7 crossbar section.

1 Claim 28 (currently amended): The ~~data-communication network~~ switch fabric of claim 23,  
2 wherein each ~~of the~~ crossbar sections maintains a plurality of data cell queues of the data cells  
3 received on the data links coupling each ~~of the~~ crossbar sections to each ~~of the~~ input ports, each

4 of the data cell queues corresponding with an output port, each of the data cells in each of the  
5 data cell queues being of a partition of a portion of a data frame having specifying a destination  
6 associated with the output port.

1 Claim 29 (currently amended): The ~~data communication network~~ switch fabric of claim 28,  
2 wherein each of the data cell queues of each of the crossbar sections is capable of enqueueing a  
3 finite number of data cells at any one time, and wherein the ability of each of the crossbar  
4 sections to receive the data cells of the data frames with a destination associated with the output  
5 port is based upon a quantity of locations in each of the data cell queues, which are each location  
6 capable of receiving a single data cell from an input port.

1 Claim 30 (currently amended): The ~~data communication network~~ switch fabric of claim 23,  
2 wherein each of the output ports includes logic for reassembling the data frames having  
3 specifying a destination associated with each of the output ports from data cells received from  
4 each of the crossbar sections coupled to each of the output ports.

1 Claim 31 (currently amended): The ~~data communication network~~ switch fabric of claim 30,  
2 wherein each of the output ports is coupled to each MAC device associated with each of the  
3 output ports through a common transmission medium and wherein each of the output ports  
4 maintains a MAC queue of reassembled data frames for transmission to the associated MAC  
5 devices, the destination of each reassembled data frame in the MAC queue being associated with  
6 the MAC device.

1 Claim 32 (currently amended): The ~~data communication network~~ switch fabric of claim 31,  
2 wherein each ~~of the~~ output ports transmits a signal to each ~~of the~~ crossbar sections indicating an  
3 ability to receive data cells from data links coupling each ~~of the~~ output ports to each ~~of the~~  
4 crossbar sections.

1 Claim 33 (currently amended): The ~~data communication network~~ switch fabric of claim 23,  
2 wherein for each ~~of the~~ output ports, each ~~of the~~ crossbar sections transmits a signal to each ~~of~~  
3 the input ports indicating the ability of each ~~of the~~ crossbar sections to receive the data cells of  
4 the data frames ~~having~~ specifying a destination associated with each ~~of the~~ an output ports.

### REMARKS

In accordance with 37 C.F.R. § 1.114, Applicants have submitted a Request for Continued Examination (RCE) of the above-referenced patent application. By the amendments and remarks provided herein, Applicants have addressed all outstanding issues presented in the Final Office Action dated **December 22, 2003** (hereafter, the Action), in which: claims 1-33 are rejected under 35 USC 103(a) as being unpatentable over Charny et al. (US 6,072,772, hereinafter "Charny") in view of Cloonan et al. (US 5,724,352, hereinafter "Cloonan") and Momirov (US 6,484,209, hereinafter "Momirov").

#### Current Status of Claims:

Claims 1-3 and 5-33 remain in the application. Claim 4 has been canceled. Applicants offer to amend claims 1-3 and 5-33 as above, to particularly claim that which Applicants consider to be the invention.